

Patent/ public disclosure document
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[Abstract(made by the applicant)] [Claims] [Detail Description] [Drawing Description]

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(57)

[ABSTRACT]**[PROBLEM TO BE SOLVED]**

Vertebra is coupled flexibly mutually, case is acted on anatomically and comfortably, it is not worn by repetition or action of stress to cut either, simple is quick simply, and anchoring provides implant between vertebral spinous process without the need for operation of territory of sane anatomy.

[SOLUTION]

It is configured from two pairs of auris 6 protruding from body 5 of the approximately hypsiloid configuration that central part 5a is pulpy and facies lateralis of branch connection 5b of body 5-2 book, these auris 6 defines mounting cap department 7 of vertebral spinous process, and it is done with assembling comprising measure 8 to fix to projection 2.

[WHAT IS CLAIMED IS:]**[Claim 1]**

Vertebral interspinal implant; wherein; The abbreviation U character-shaped body that central part (5a) is pulpy (5), It is configured from two pairs of ears protruding from facies lateralis of two branch connection of the body (5) (5b) (6), a fastening means these ears (6) define mounting cap department of spinous process of a vertebra (3) (2) (7) and to fix to projection (2) (8,9) is comprised.

[Claim 2]

Implant; according to claim 1 wherein; Cushion to become than suitable elastic material such as fiber or synthetic material (15) is generally interposed between two branch connection of U character-shaped body (5) flank (5b).

[Claim 3]

Implant as claimed in claim 1 or claim 2; wherein; On earth it is produced as article by forging metal.

[Claim 4]

Implant; according to claim 3 wherein; It is made by titanium.

[Claim 5]

It is implant as claimed in any one of claim 4 from claim 1; wherein; It is moved in consonance with branch connection of body (5) (5b) each other, and two pairs of ears (6) are disposed so that consecutive plural vertebra can install plural implant (1) continually.

[Claim 6]

It is implant as claimed in any one of claim 5 from claim 1; wherein; A fastening means to fix implant to spinous process of vertebra (3) (2) is configured from a screw installed in projection (2) (9) or a mounting hole of an inosculation picot (8).

[Claim 7]

It is implant as claimed in any one of claim 6 from claim 1; wherein; At first it is approached each other, and, from it, the free end portion is gone to, and two ears of lower branch connection (5b) (6) go away while two ears of upper branch connection (5b) (6) go to the free end portion, and distance gets narrow.

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[TECHNICAL FIELD OF THE INVENTION]

The present invention relates to vertebral interspinal implant that is two adjacent implant interposing between vertebral spinous process (implant).

[0002]

[PRIOR ART]

When intervertebral disc damages, there can be the thing that abnormality is caused in the vertebral airspace which is next to this intervertebral disc. Such an airspace considerably presses rear condylar process, the instability which is the wear of projection with a drastic pain and overall of vertebral column is generated. Such an instability makes intervertebral disc come close, therefore, it can be produced from arthropathy of operation and part of intervertebral disk displacement to make articular band fabric become weak, it is for a pain, and, in similar, considerable stress is hung in rear joint.

[0003]

Method installing support device of vertebral column comprising of the rigid elements which are coupled by osseous fastener to prevent this instability is conventional and known in the art. A rigid element tends to be composed of metal axis installed in consonance with plural vertebra on either side of spinous process. Osseous fastener is configured from screw as referred to as "stem" for general in what is installed in vertebra cauline lay.

[0004]

[PROBLEM TO BE SOLVED BY THE INVENTION]

However, Because it is difficult to install these devices, and large-scaled, the anchoring activity which is complex is needed among other things, it was disadvantage. In addition, Even if anything is said, because comparatively long vertebral area is fixed, mobility of case is controlled remarkably, joint on either side of this fixed area is considerably pressed, and there can be the thing that a disease of otherwise is caused.

[0005]

Interposing a wedge between spinous process for method preventing spinal instability is conventional and known in the art. Is installed, and such a wedge fixes a vertebra to an end of vertebral column area fixed by bone fixation apparatus for definition like statement above among other things, vertebral stress to receive can be limited.

[0006]

An existing wedge is configured from cushion between spinous process fixed to vertebral column by band fiber surrounding spinous process. In spinal extension, cushion holds distance between two *things* of vertebral projection in minimum, a pain of joint can be moderated after intervertebral disc. When the spinal column is bent, band limits that distance of two projection opens.

[0007]

Because this cushion fixes vertebra to lay of constant from material of quality of fiber comparatively firmly, too, there is inconvenience not to be much comfort for case. Even more particularly, Cushion tends to deteriorate in repetition or action of stress to cut.

[0008]

In addition, Because it is necessary to let band go through in circumference of projection, because it is to put band by means of putting operation for somatic sane territory, it is to make sane band of original attenuate. Even more particularly, It is distress to determine suitable tensile force to add to band to adjust airspace of projection as opposed to cushion. In addition, Band deteriorates by means of traumatic action added to band repeatedly from projection, when, even more particularly, degradation is promoted to tend to lose elasticity, limit of vertebral motion when vertebral column turns weakens.

[0009]

The present invention positions vertebra flexibly mutually, body of case is acted on comfortably, it does not deteriorate by repetition or action of stress to cut either, simple is quick simply, and anchoring is for the purpose of solving all the superscription nonconformity by providing vertebral interspinal implant without the need for operation of sane territory of body.

[0010]

[MEANS TO SOLVE THE PROBLEM]

Because of this, The implant which is object of the present invention is configured from two pairs of ears protruding from facies lateralis of two branch connection of the abbreviation U character-shaped body that central part is pulpy and the body. These ears define installation cap department of vertebral spinous process, measure to fix to projection is comprised.

[0011]

This implant adjust the central part to lay of rear condylar process, and doubling, pair of an ear of each are had on spinous process around each spinous process, and it is interposed the branch connection of cross direction in airspace between spinous process. Implant can position vertebral one one in central part of body becoming pulpy flexibly mutually. By means of this, Bending and extension of vertebral column are enabled at the both sides as neutral position in lay becoming approximately parallel transversal branch connection of 2 of abbreviation U character-shaped body.

[0012]

Because, by elastic limit of this central part, excessive lordosis can be prevented, rear arthrosis can prevent the situation that big stress acts on, motion, besides, to enlarge vertebral column is not disturbed. Spinal bending can be limited without depending on band by means of this elastic limit more.

[0013]

As thus described implant with the present invention is comfort for case in acting on anatomically. Repeated stress acts on in what is the construction material that implant has high strength, and it needs not to be worn either.

[0014]

Even more particularly, It can be easily had on airspace between spinous process so that original configuration is provided, and there is an ear for use in anchoring, it is not had to add hand to site to install especially. When, about airspace between spinous process, hernia is operated for for a case of especially intervertebral disk displacement, it is tended airspace to be set up. If this preparations is completed, two connected vertebral spinous process is separated lightly, while interposing spinous process between the ears which made a pair, implant is had between spinous process and spinous process, and it is crowded and implant is fixed to spinous process and is enough. If it does it this way, it is not necessary to operate for somatic sane territory by reason of installation of implant.

[0015]

That two branch connection narrows distance each other if necessary is limited , by way of example only, suitable elastic materials are preferable as generally interposing cushion made with fiber and composition materials between transversal branch connection of U character-shaped body to supplement vertebral buffer action.

[0016]

It is preferable for it to be assumed that on earth forging of article is made of metal as for this implant. If it is made by titanium, it is more preferable. Mechanical character is suitable, and this material (titanium) can employ radiography art such as scanner or atomic nucleus magnetic resonance after operation without disturbing image.

[0017]

Because, according to the preferred arrangement of the present invention, lay of mutual is moved as against the other pair pair of one ear by direction along branch connection of body, a vertebra of a consecutive plural number can carry out implant of a plural number. As thus described two ears of adjacent implant can be had on isologous spinous process to be out of lay.

[0018]

If it is possible, What is composed by a mounting hole of a screw installed by projecting or an inosculation picot is desirable for the measure which fixes implant to vertebral spinous process.

[0019]

[MODE FOR CARRYING OUT THE INVENTION]

In the following, the present invention is described when taken in conjunction with attached drawing to

show a preferred embodiment of the spinal interspinal implant which is object of the present invention as example of non-definition some other time to deepen understanding.

[0020]

FIG. 1 is virgule of implant concerning the present invention. FIG. 2 is profile after installation of implant of FIG. 1. FIG. 3 is a rear elevation of FIG. 2. FIG. 4 is profile of two wedges installed in three consecutive vertebra. FIG. 5 is profile after installation by an embodiment other than the present invention.

[0021]

Each figure illustrates vertebral interspinal implant 1 that is implant interposed between spinous process 2 of two adjacent vertebra 3 from foreign angle. Implant 1 is configured from two pairs of ears 6 which protruded from abbreviation U character-shaped body 5 that central part 5a is pulpy and facies lateralis of branch connection 5b of the body 5-2 book.

[0022]

It is made by titanium, and on earth implant 1 is forged as article. Pair of each ear 6 defines installation cap department 7 of spinous process 2 so that it is shown in figure. In particular, When FIG. 3 is considered, ear 6 of 2 of upper branch connection 5b goes to the free end, and distance gets narrow, but, at first on the other hand, ear 6 of 2 of lower branch connection 5b approach each other, and, from it, the free end is gone to, and it is found that it opens. By this specific configuration, ear 6 can fit anatomical configuration of interposed spinous process 2.

[0023]

In addition, Bore 8 for use in osseous screw 9 or a picot is installed in each ear 6. Screw or a picot is installed in projection, and it is caught in this bore 8, and is crowded, ear 6 gets possible to be fixed to spinous process 2.

[0024]

In particular, Doubling, pair of ear 6 of each are had on spinous process 2 around each spinous process 2, and doubling, side branch connection 5b are touched in lay of rear condylar process 10, and, as for implant 1, it is interposed central part 5a of body 5 in airspace between spinous process so that it is shown in FIG. 2 and FIG. 5.

[0025]

Implant can position one one of vertebra 3 in central part 5a becoming pulpy flexibly mutually. By means of this, Bending and extension of vertebral column are enabled at the both sides as neutral position in lay becoming approximately parallel branch connection 5b of 2 illustrated by FIG. 2 and FIG. 3 wide.

[0026]

Elastic limit of this central part 5a can prevent the situation that big stress acts on rear arthrosis 10 in what can prevent excessive lordosis, motion, besides, to enlarge vertebral column is not disturbed. Even if this elastic limit does not install band for more artificial manipulation around spinous process 2, spinal bending can be limited.

[0027]

As thus described implant 1 acts on for case anatomically and comfortably. Airspace between spinous process can easily install so that there is ear 6 for use in the generic configuration and anchoring, only limited activity is needed in site to install. When hernia is operated for among other things so that intervertebral disc can come close in the event of operation of intervertebral disk displacement, airspace between spinous process has been often set up. If this preparations is completed, two spinous process 2 is separated lightly, while interposing projection 2 in fitting cap 7, implant 1 is had between spinous process and spinous process, and it is crowded and implant is fixed to projection 2 in screw 9 of superscription or a picot and is enough.

[0028]

If there is implant, it is desirable to do with a product made in titanium. Titanium catches action of stress repeatedly, and it is not worn at all either. The mechanical character is suitable, and titanium can employ radiography art such as scanner or atomic nucleus magnetic resonance after operation. Titanium is

because provided image is not disturbed.

[0029]

As for FIG. 4, lay of two pairs of ears 6 shows that a vertebra of a consecutive plural number of vertebral column can install implant 1 of a plural number in what is moved mutually in direction along branch connection 5b of body 5. As thus described ear 6 of two adjacent implant 1 can be had on isologous spinous process 2 to be out of lay. As thus described implant with the present invention can be used to support this area instead of conventional apparatus in what do not completely stiffen vertebral column area to fall under.

[0030]

FIG. 5 puts cushion 15 of suitable elastic materials of fiber and composition materials between side branch connection 5b of body 5, by way of example only, what can be fixed to branch connection in suitable method of adhesion is shown. This cushion 15 limits that two branch connection 5b wide narrows distance each other if necessary, buffer action of vertebra 3 can be supplemented.

[BRIEF DESCRIPTION OF DRAWINGS]

[FIG. 1]

It is a perspective diagram of implant concerning the present invention.

[FIG. 2]

It is profile after installation of implant of FIG. 1.

[FIG. 3]

It is back elevation of FIG. 2.

[FIG. 4]

It is profile of two wedges installed in three consecutive vertebra.

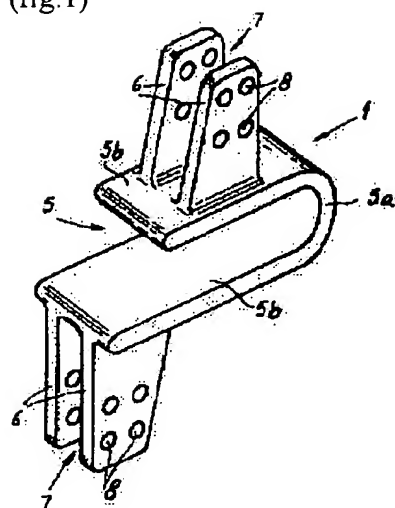
[FIG. 5]

It is profile after installation by an embodiment other than the present invention.

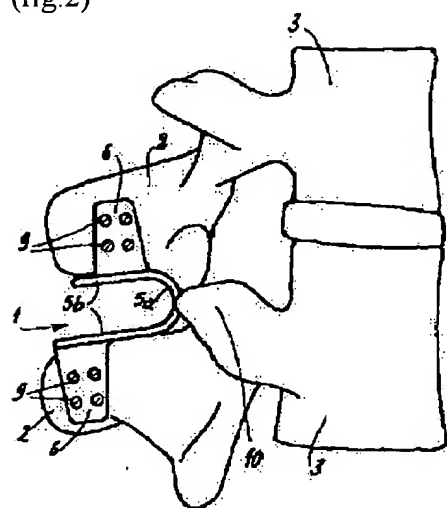
[DENOTATION OF REFERENCE NUMERALS]

1 Implant 2 Spinous process 3 Vertebra 5 Body 5a Central part 5b Branch connection 6 An ear 7 Installation cap department 8 A mounting hole (a fastening means) 9 Screw (a fastening means) 15 Cushion

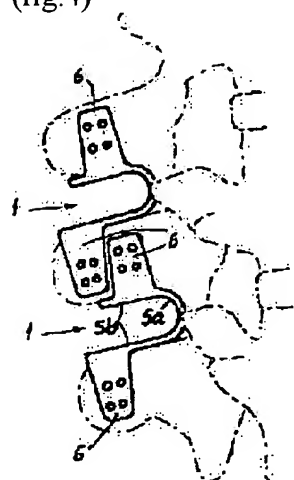
(fig.1)



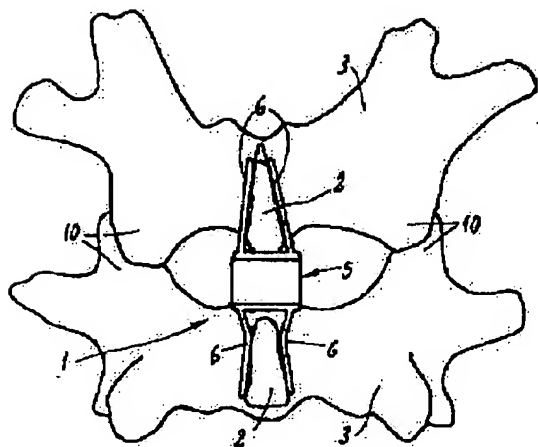
(fig.2)



(fig.4)



(fig.3)



(fig.5)

